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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,185	07/21/2004	Sung-Cheol Yoon	HNG-0004	5544
23413 7590 12/18/2008 CANTOR COLBURN, LLP 20 Church Street 22nd Floor Hartford, CT 06103			EXAMINER CHEUNG, WILLIAM K	
			ART UNIT 1796	PAPER NUMBER
			NOTIFICATION DATE 12/18/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary

Application No.

10/502,185

Applicant(s)

YOON ET AL.

Examiner

WILLIAM K. CHEUNG

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6,8,10-13,16-19,25-28,35-39,41 and 42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,8,10-13,16-19,25-28,35-39,41 and 42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Final Drawing Review (PTO-848)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. In view of the amendment filed November 20, 2008, claims 20, 23, 24 have been cancelled. Claims 1, 6, 8, 10-13, 16-19, 25-28, 35-39, 41, 42 are pending.
2. In view of the amendment filed November 20, 2008, the rejection of Claims 20, 23, 24 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lipian et al. (US 6,455,650), is withdrawn.
3. In view of the following rejection, the allowance of Claims 1, 6, 8, 10-13, 16-19, 25-28, 35-39, 41, 42 is withdrawn.

Claim Rejections - 35 USC § 112

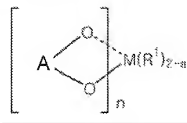
4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 6, 8, 10-13, 16-19, 25-28, 35-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 (line 21), the recited chemical structure is not supported by the original specification.

Chemical Formula 1



6. Claims 1, 6, 8, 10-13, 16-19, 25-28, 35-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It seems that the precatalysts of claim 25 require the A-O bond that connects to the M via a dative bond to be a double bond. How is A-O bond that connects to the M via a dative bond to be a single bond?

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 (line 2-4), the recitation of the precatalysts within the Markush group are considered indefinite because the recited Chemical Formula 1 does not support the precatalyst cited in claim 25.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
10. Claims 1, 6, 8, 10-13, 16-19, 25-28, 35-39, 41, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipian et al. (US 6,455,650).

I. (Previously presented) A method for preparing a cycloolefin polymer containing polar functional groups, comprising:

a) preparing a catalyst mixture including

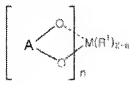
i) a precatalyst represented by Chemical Formula 1, containing a Group 10 transition metal having a ligand containing oxygen ions bonded to the metal;

ii) a first cocatalyst which is an organic compound containing a Group 15 element; and

iii) a second cocatalyst which is capable of providing an anion and weakly coordinating to the metal of the precatalyst; and

b) subjecting a monomer solution comprising a norbornene-based compound having an exo isomer content of more than 50 mol%, containing a polar functional group, and represented by the following Chemical Formula 5, to an addition polymerization reaction in the presence of an organic solvent and the catalyst mixture, at a temperature of 80-200 °C, the total amount of the organic solvent being 50-800 % by weight based on the total weight of the monomer contained in the monomer solution, and the product yield of the cycloolefin polymer being 50% by weight or more based on the total weight of the monomer wherein the polymer comprises more than 30 mol% of norbornene-based compound containing a polar functional group represented by the following Chemical Formula 5:

Chemical Formula 1



wherein

M is a Group 10 transition metal;

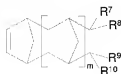
n is 1 or 2;

A represents a linear or branched C_{1-30} alkylene, arylene, aralkylene, or

alkenylene group or a linear or branched C_{1-20} alkylene, arylen, aralkylene, or alkenylene group containing a hetero atom including Si, Ge, S, O, or N;

R^1 is hydrogen; a linear or branched C_{1-20} alkyl, alkenyl or vinyl group; a C_{3-12} cycloalkyl group unsubstituted or substituted with a hydrocarbon; a C_{6-40} aryl group unsubstituted or substituted with a hydrocarbon; a C_{6-40} aryl group containing at least one hetero atom; a C_{7-15} aralkyl group unsubstituted or substituted with a hydrocarbon; or a C_{3-20} alkynyl group;

Chemical Formula 5



wherein

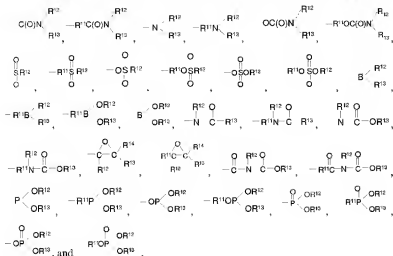
m is an integer of 0 to 4,

at least one of R^7 , R^8 , R^9 and R^{10} is a polar functional group, the others are non-polar functional group, and R^7 , R^8 , R^9 and R^{10} can be bonded together to form a saturated or unsaturated C_{1-20} cyclic group or C_{6-24} aromatic ring;

the non-polar functional group includes hydrogen; halogen; a linear or branched C_{1-20} alkyl group; a linear or branched C_{1-20} haloalkyl group; a linear or branched C_{1-20} alkenyl group; a linear or branched C_{1-20} haloalkenyl group; a linear or branched C_{3-20} alkynyl group; a linear or branched C_{3-20} haloalkynyl; a C_{3-15} cycloalkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; a C_{6-40} aryl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; and a C_{7-15} aralkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl;

the polar functional group is a non-hydrocarbonaceous polar group containing at least one of O, N, P, S, Si and B, and is selected from the group consisting of: OR^{12} , $OC(O)OR^{12}$, $R^{11}OC(O)OR^{12}$, $C(O)R^{12}$, $R^{11}C(O)R^{12}$, $OC(O)R^{12}$, $R^{11}OC(O)R^{12}$, $(R^{11}O)_pOR^{12}$, $(OR^{11})_pOR^{12}$, $C(O)OC(O)R^{12}$, $R^{11}C(O)OC(O)R^{12}$, SR^{12} , $R^{11}SR^{12}$, SSR^{12} ,

$R^{11}SSR^{12}$, $S(=O)R^{12}$, $R^{11}S(=O)R^{12}$, $R^{11}C(=S)R^{12}$, $R^{11}C(=S)SR^{12}$, $R^{11}SO_2R^{12}$, SO_2R^{12} , $R^{12}N=C=S$, NCO , $R^{12}NCO$, CN , $R^{12}CN$, $NNC(=S)R^{12}$, $R^{12}NNC(=S)R^{12}$, NO_2 , $R^{12}NO_2$,



in which R^{11} is a linear or branched C_{1-20} alkyl group; a linear or branched C_{1-20} haloalkyl group; a linear or branched C_{1-20} alkenyl group; a linear or branched C_{1-20} haloalkenyl group; a linear or branched C_{3-20} alkynyl group; a linear or branched C_{3-20} haloalkynyl; a C_{3-12} cycloalkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; a C_{6-40} aryl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; and a C_{7-15} aralkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl;

R^{12} , R^{13} , and R^{14} are each independently hydrogen; a halogen; a linear or branched C_{1-20} alkyl group; a linear or branched C_{1-20} haloalkyl group; a linear or branched C_{1-20} alkenyl group; a linear or branched C_{1-20} haloalkenyl group; a linear or branched C_{3-20} alkynyl group; a linear or branched C_{3-20} haloalkynyl; a C_{3-12} cycloalkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; a C_{6-40} aryl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; a C_{7-15} aralkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl,

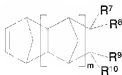
or haloalkynyl; or alkoxy, haloalkoxy, carbonyloxy, halocarbonyloxy; and

p is an integer of 1 to 10.

41. (Previously presented) A method for preparing a cycloolefin polymer containing polar functional groups, comprising:

- a) preparing a catalyst mixture including
 - i) a precatalyst selected from the group consisting of (allyl)Pd(acyl acetate), (allyl)Pd(acetate), (acetate)Pd(acyl acetate), and a mixture thereof;
 - ii) a first cocatalyst which is an organic compound containing a Group 15 element; and
 - iii) a second cocatalyst which is capable of providing an anion and weakly coordinating to the metal of the precatalyst; and
- b) subjecting a monomer solution comprising a norbornene-based compound containing a polar functional group and represented by the following Chemical Formula 5 to an addition polymerization reaction in the presence of an organic solvent and the catalyst mixture, at a temperature of 80-200 °C, the total amount of the organic solvent being 50-800 % by weight based on the total weight of the monomer contained in the monomer solution, and the product yield of the cycloolefin polymer being 50% by weight or more based on the total weight of the monomer, wherein the polymer comprises more than 20 mol% of norbornene-based compound containing a polar functional group represented by the following Chemical Formula 5:

Chemical Formula 5



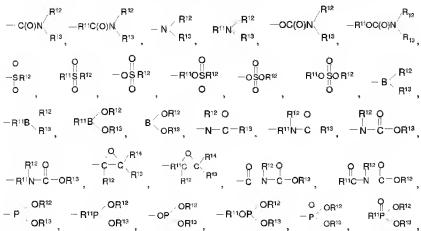
wherein

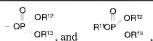
m is an integer of 0 to 4,

at least one of R^7 , R^8 , R^9 and R^{10} is a polar functional group, the others are non-polar functional group, and R^7 , R^8 , R^9 and R^{10} can be bonded together to form a saturated or unsaturated C_{1-20} cyclic group or C_{6-24} aromatic ring;

the non-polar functional group includes hydrogen; halogen; a linear or branched C_{1-20} alkyl group; a linear or branched C_{1-20} haloalkyl group; a linear or branched C_{1-20} alkenyl group; a linear or branched C_{3-20} haloalkenyl group; a linear or branched C_{3-20} alkynyl group; a linear or branched C_{3-20} haloalkynyl; a C_{3-12} cycloalkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; a C_{6-40} aryl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; and a C_{7-15} aralkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl;

the polar functional group is a non-hydrocarbonaceous polar group containing at least one of O, N, P, S, Si and B, and is selected from the group consisting of: OR^{12} , $OC(O)OR^{12}$, $R^{11}OC(O)OR^{12}$, $C(O)R^{12}$, $R^{11}C(O)R^{12}$, $OC(O)R^{12}$, $R^{11}OC(O)R^{12}$, $(R^{11}O)pOR^{12}$, $(OR^{11})pOR^{12}$, $C(O)OC(O)R^{12}$, $R^{11}C(O)OC(O)R^{12}$, SR^{12} , $R^{11}SR^{12}$, SSR^{12} , $R^{11}SSR^{12}$, $S(=O)R^{12}$, $R^{11}S(=O)R^{12}$, $R^{11}C(=S)R^{12}$, $R^{11}C(=S)SR^{12}$, $R^{11}SO_2R^{12}$, SO_2R^{12} , $R^{11}N=C=S$, NCO , $R^{11}NCO$, CN , $R^{11}CN$, $NNC(=S)R^{12}$, $R^{11}NNC(=S)R^{12}$, NO_2 , $R^{11}NO_2$,





in which R^{11} is a linear or branched C_{1-20} alkyl group; a linear or branched C_{1-20} haloalkyl group; a linear or branched C_{1-20} alkenyl group; a linear or branched C_{1-20} haloalkenyl group; a linear or branched C_{3-20} alkynyl group; a linear or branched C_{3-20} haloalkynyl; a C_{3-12} cycloalkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; a C_{6-40} aryl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; and a C_{7-15} aralkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl;

R^{12} , R^{13} , and R^{14} are each independently hydrogen; a halogen; a linear or branched C_{1-20} alkyl group; a linear or branched C_{1-20} haloalkyl group; a linear or branched C_{1-20} alkenyl group; a linear or branched C_{1-20} haloalkenyl group; a linear or branched C_{3-20} alkynyl group; a linear or branched C_{3-20} haloalkynyl; a C_{3-12} cycloalkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; a C_{6-40} aryl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; a C_{7-15} aralkyl group unsubstituted or substituted with alkyl, alkenyl, alkynyl, halogen, haloalkyl, haloalkenyl, or haloalkynyl; or alkoxy, haloalkoxy, carbonyloxy, halocarbonyloxy; and

p is an integer of 1 to 10.

Lipian et al. (col. 112-3, claims 1 and 2; col. 115-116, claims 16 and 17; col. 40, line 19-59) disclose a method for preparing a cycloolefin polymer that is substantially identical to applicants' claims 1, 6, 8, 10-13, 16-19, 23, 25-28, 35-42. Lipian et al. (col. 29, line 45 to col. 32, line 23) clearly disclose cycloolefin polymer having a structure VII (col. 30, line 12-19) having at least one polar functional group as claimed (col. 30, line 62-67).

Lipian et al. (col. 78-79, examples 160-163) clearly disclose a precatalyst comprising two different cocatalysts. Regarding claim 25, Lipian et al. (col. 21, line 16-20) clearly disclose the precatalyst as claimed. Regarding claim 26, Lipian et al. (col. 128, line 46) clearly disclose the cocatalyst as claimed. Regarding claim 27, Lipian et al.

(col. 26, line 57-59; col. 130, line 19-22) clearly disclose the cocatalyst as claimed.

Regarding claim 28, Lipian et al. (col. 30, line 62 to col. 32, line 55; particularly col. 30, line 62-67) clearly disclose monomers as claimed.

Regarding the claimed ally palladium acetate, Lipian et al. (col. 46, example 10) clearly disclose the preparation of allyl palladium acetate complexed with (tri-o-tyolylphosphine) (the first cocatalyst). Regarding the claimed second cocatalyst, Lipian et al. (col. 26, line 25-67) clearly teach the use of WCA salts.

In working examples of Lipian et al. (col. 49-74, examples 23-25, 28-31, 34, 37, 39, 42, 44-47, 51, 53, 58-76, 84, 88, 89, 95, 98, 102, 105, 107, 110-112, 115-117, 123-125, 129 132, 139) clearly disclose processes characterized with a product yield of greater than 50 wt% or more based on the total weight of the monomer. It would not be difficult to one of ordinary skill in art to recognize that it is desirable to obtain a process capable of producing a product yield of greater than 50 wt% or more.

In view of the reasons set forth above, although Lipian et al. do not contain a working example using the claimed catalyst for polymerizing the disclosed monomers at a product yield of greater than 50 wt%, Lipian et al. still have clearly disclosed the catalyst and the monomers as claimed.

Therefore, in view of the substantially identical catalyst and monomer disclosed in Lipian et al. and as claimed, the examiner has a reasonable basis that the claimed "product yield of greater than 50 wt%" is inherently possessed in Lipian et al. Since the PTO does not have proper means to conduct experiments, the burden of proof is now

shifted to applicants to show otherwise. In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977); In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Further, motivated by the expectation of success that a product yield of greater than 50 wt% can be obtained as demonstrated by some of the working examples in Lipian et al. (col. 49-74, examples 23-25, 28-31, 34, 37, 39, 42, 44-47, 51, 53, 58-76, 84, 88, 89, 95, 98, 102, 105, 107, 110-112, 115-117, 123-125, 129 132, 139), it would have been obvious to one of ordinary skill in art to perform the polymerization process of Lipian et al. with the disclosed catalyst and monomers accordingly to obtain a yield of 50 wt% feature as claimed.

Regarding the claimed "norbornene-based compound having an exo isomer content of more than 50 mol%", Lipian et al. (col. 29, line 45 to col. 32, line 23) clearly disclose cycloolefin polymer having a structure VII (col. 30, line 12-19) having at least one polar functional group as claimed (col. 30, line 62-67). The examiner believes that the claimed "exo isomer content of more than 50 mol%" is inherently possessed in Lipian et al. because the functionalization norbornene inherently can result isomers that are endo, exo, or the mixture thereof, depending on the reaction condition. This is because although exo is the form that is thermodynamically more stable as compared to the endo form, sometimes, the reaction can be kinetically more favorable for the formation of the endo form. Therefore, the examiner has a reasonable basis that the isomers of norbornene type materials do not necessarily in a 50/50 (endo/exo) racemic mixture form.

Regarding the precatalyst limitations of claims 41-42, Lipian et al. (col. 46, example 10; col. 127, claim 54; col. 129, claim 61) together clearly teach a precatalyst comprises platinum, acetates or acetylacetonates, and an anionic hydrocarbyl containing ligand (R'). Regarding (R'), Lipian et al. (col. 3, line 47-50) clearly indicate that the anionic hydrocarbyl containing ligand can be allylic ligands. Regarding the claimed polymerization temperature and the amount of solvent to be used in claims 41-42, Lipian et al. (col. 40, examples 17-46) clearly teach polymerization processes involving the claimed temperature range of 80-200 °C, and the claimed amount of solvent.

Regarding the Declaration filed October 19, 2007, the comparative data are not commensurate to the scope of the claims and the teachings of Lipian et al., particularly example 10 (col. 46). Therefore, the comparative data filed fails to establish the criticality of the claimed invention.

In view of the 112 rejection set forth, the rationale for the instant rejection is adequate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K. Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/William K Cheung/
Primary Examiner, Art Unit 1796

William K. Cheung, Ph. D.
Primary Examiner
December 10, 2008

